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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,783	10/03/2003	Wen-Ting Chu	TSM03-0675	3885

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EXAMINER	
ABRAHAM, FETSUM	
ART UNIT	**PAPER NUMBER**
2826	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/678,783	**Applicant(s)** CHU ET AL.	
	Examin r Fetsum Abraham	**Art Unit** 2826	

-- Th MAILING DATE of this communication appears on th cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) 1-9 is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Augstein et al (4,452,881).

The patent discloses a method of arranging a semiconductoive structure composed of the following steps:

a) Providing a polysilicon film on a substrate.

b) Treating the polysilicon layer with ammonia.

c) Applying a photoresist on a portion of the polysilicon layer.

d) Etching the exposed portion of the polysilicon layer.

d) Oxidizing the polysilicon layer after etching.

As can be seen, the processes above are identical with the claimed process of making a structure, with the exception of the oxidation process. However, that oxidation process in the claimed invention, which took place before the removal of a portion of the polysilicon, could not have affected the etching process at all. Whether present before etching or not, the oxidation layer could not have changed the final product. Therefore, it would have been obvious to one skilled in the art to oxidize the polysilicon layer in the prior art before etching its portion instead of after, since the oxidation process in this particular situation cannot change the final product, which is identical to the claimed structure in structure and performance.

As for claims 4,9, layer thickness is a function of subjective use that is known variable in the art.

As for claim 5, wet or dry oxidation processes are notoriously known in the art and it would have been obvious to select wet oxidation for the deposition of oxides in the prior art since it results in denser oxide layers that can provide better isolation and strength as compared to dry oxidation methods.

As for claim 6, polysilicons on semiconducting substrates are known to be used for resistors, transistors, contacts and even active layers. Therefore, the use of the polysilicon structure in the prior art is generic to all semiconducting devices including the claimed device.

As for claims 7,8, the application of masking a layer prior to oxidation is again a function of how much area is utilized for oxidation. Clearly, the portions of any layer that is not designed to be oxidized must be patterned and protected from the oxidizing species. One of the known methods of this application is covering or masking those portions. Therefore, it would have been obvious to a person skilled in the art to mask a portion of a layer before oxidizing the rest. In addition, silicon nitride is known to protect layers from oxidation and thus one of the best materials for this application.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Augstein et al (4,452,881) in view of Sugihara et al (6,566,734).

The prior art discloses all claimed subject matter but omits to include trench isolations in the structure. However, the secondary reference shows devices isolated by trench isolation elements. Therefore, it would have been obvious to one skilled in the art to isolate any device in a semiconductor substrate with trenches, since the method protects the devices from cross talk induced problems.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Augstein et al (4,452,881) in view of Sze et al (6,297,123).

The primary reference discloses all subject matter claimed but might have been short discussing how the polysilicon layer is formed over the substrate. However, the secondary reference teaches the method. Therefore, it would have been obvious to one skilled in the art to use the method in the prior art since CVD is one of the most ancient and common way of depositing polysilicon on a substrate that guarantees stable layers on deposition surfaces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fetsum Abraham whose telephone number is: 571-272-1911. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached at 571-272-1915.

Fetsum Abraham
6/2/04